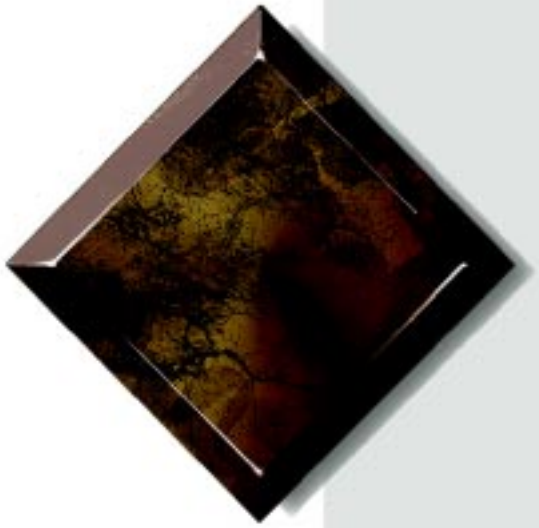


Gateway ALR 9000 User's Guide

Part # 8503432 A MAN US GW2K 9000 USR GDE R2 7/98

Notices

All Rights Reserved

The information in this manual has been carefully checked and is believed to be accurate. However, changes are made periodically. These changes are incorporated in newer publication editions. Gateway 2000 may improve and/or change products described in this publication at any time. Due to continuing system improvements, Gateway 2000 is not responsible for inaccurate information which may appear in this manual. For the latest product updates, consult the Gateway 2000 web site at www.gateway.com. In no event will Gateway 2000 be liable for direct, indirect, special, exemplary, incidental, or consequential damages resulting from any defect or omission in this manual, even if advised of the possibility of such damages.

In the interest of continued product development, Gateway 2000 reserves the right to make improvements in this manual and the products it describes at any time, without notices or obligation.

Trademark Acknowledgments

AnyKey, black-and-white spot design, ColorBook, CrystalScan, Destination, EZ Pad, EZ Point, Field Mouse, Gateway 2000, HandBook, Liberty, TelePath, Vivitron, stylized “G” design, and “You’ve got a friend in the business” slogan are registered trademarks and “All the big trends start in South Dakota” slogan, GATEWAY, and Gateway Solo are trademarks of Gateway 2000, Inc. Intel, Intel Inside logo, and Pentium are registered trademarks and MMX is a trademark of Intel Corporation. Microsoft, MS, MS-DOS, and Windows are trademarks or registered trademarks of Microsoft Corporation. All other product names mentioned herein are used for identification purposes only, and may be the trademarks or registered trademarks of their respective companies.

All Rights Reserved

The information in this manual has been carefully checked and is believed to be accurate. However, changes are made periodically. These changes are incorporated in newer publication editions. ALR may improve and/or change products described in this publication at any time. Due to continuing system improvements, ALR is not responsible for inaccurate information which may appear in this manual. For the latest product updates, consult the ALR web site at **www.alr.com**. In no event will ALR be liable for direct, indirect, special, exemplary, incidental, or consequential damages resulting from any defect or omission in this manual, even if advised of the possibility of such damages.

In the interest of continued product development, ALR reserves the right to make improvements in this manual and the products it describes at any time, without notices or obligation.

Trademark Acknowledgments

ALR is a registered trademark of Advanced Logic Research, Inc. All other product names mentioned herein are used for identification purposes only, and may be the trademarks or registered trademarks of their respective companies.

Contents

Important Safety Instructions vii
Regulatory Compliance Statements viii
Computer Virus Notice x

Preface xiii
About This Guide xiv
Conventions Used in this Guide xv

Getting Started 1
Before You Begin 2
Assembling Your System 3
Inspecting the Contents 3
Connecting Peripherals 4
Powering Up the System 5

System Features 7
Basic Architecture 8
Front Panel 9
Reset Switch 9
3.5-inch Floppy Disk Drive 9
SCSI CD-ROM Drive 9
Bezel Doors 10
Storage Bays 10
Keyboard Inhibit Switch 10
Power On/Off Switch 10
LED Indicators 10
Bezel Keylock 11
InforManager™ (IFM) LCD 11
Rear Panel 12
ECC Reset Switch 12
Parallel Port 12
Mouse Port 13
Keyboard Port 13
Serial Port 1 13
Serial Port 2 13
Power Supply Fault Reset Switch 13

Chassis Keylocks (2) 13
Redundant Power Supply Subsystem 13
System Board 15
CPUs and CPU Slots 16
Voltage Regulator Module 16
Floppy Drive Controller 16
Hard Drive Controller 17
Adaptec® AIC™-7880 SCSI Controller 17
I/O Card Slot 17
Expansion Slots 18
Memory 18
InforManager™ 18

InforManager™ LCD 21
About InforManager™ 22
CPU Menu 24
RAM Menu 25
Disk Activity Menu 26
Fan and Temperature Menu 27
Power Menu 28
Lock Menu 29
System Menu 30
LCD Reset 31
ID Setup 32
Alarm/ID/Speaker Menu 33
System Tolerances 34

Troubleshooting 35
Handy Checklists 36
Looking Things Over 36
Verifying Your Configuration 36
Common Problems 37
Drive Problems 38
Monitor Problems 39
Printer Problems 40
Installation Problems 41

Maintenance 43
Cleaning the Mouse 44

Cleaning the Keyboard 45
Cleaning the Monitor Screen 45

Index IN-47

Important Safety Instructions

Observe the following guidelines when performing any work on your system:

- Follow all instructions marked on this product and in the documentation.
- Unplug this product from the wall outlet before cleaning. Do not use liquid or aerosol cleaners. Use a damp cloth for cleaning.
- Do not use this product near water. Do not spill liquid on or into the product.
- Do not place this product on an unstable surface.
- Openings in the system cabinet are provided for ventilation. Do not block or cover these openings. Do not place this product near or upon a radiator or heat register.
- Use only the power source indicated on the power supply. If you are not certain about your power source, consult your reseller or the local power company.
- This product is equipped with a 3-wire grounding plug (a plug with a grounding pin). This plug will only fit into a grounded power outlet. THis is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace the outlet.
- Do not walk on the power cord or allow anything to rest on it.
- If you use an extension cord with this system, make sure the total ampere ratings on the products plugged into the extension cord do not exceed the extension cord ampere rating. Also, the total ampere requirements for all products plugged into the wall outlet must not exceed 15 amperes.
- Never insert objects of any kind into the system ventilation slots.
- Do not attempt to service the system yourself except as explained elsewhere in the manual. Adjust only those controls covered in the instructions. Opening or removing covers marked “Do Not Remove” may expose you to dangerous voltages or other risks. Refer all servicing of those compartments to qualified service personnel.
- Under any of the following conditions, unplug the system from the wall outlet and refer servicing to qualified personnel:
  a. The power cord or plug is damaged.
  b. Liquid has been spilled into the system.
  c. The system does not operate properly when the operating instructions are followed.
  d. The system was dropped, or the cabinet is damaged.
  e. The product exhibits a distinct change in performance.

Important!

The system power cord serves as the main disconnect for the computer. The wall outlet must be easily accessible by the operator.

Wichtig!

Der Netzstecker dient zur Hauptunterbrechung des Computers. Die Wandsteckdose muB fur den Techniker gut zuganglich sein.

Regulatory Compliance Statements

American Users

This device has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio or television reception. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio and television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help.

Caution!

The Federal Communications Commission warns the users that changes or modifications to the unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Accessories: This equipment has been tested and found to comply with the limits of a Class B digital device. The accessories associated with this equipment are as follows:

- Shielded video cable
- Shielded power cord.

These accessories are required to be used in order to ensure compliance with FCC rules.

Canadian Users:

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of Industry Canada.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de Classe A prescrites dans le règlement sur le brouillage radioélectrique édicté par Industrie Canada

Attention!

Couper le courant avant l'entretien.

This Information Technology Equipment has been tested and found to comply with the following European directives:

European Users:

[i] EMC Directive 89/336/EEC amending directive 92/31/EEC & 93/68/EEC as per

- EN 50081-1:1992 according to
  EN 55022:1995 Class A
  EN 61000-3-2:1995 or EN 60555-2:1986
  EN 61000-3-3: 1995

- EN50082-1:1992 according to
  EN 61000-4-2:1995 or IEC 801-2:1984
  ENV 50140:1994 or IEC 801-3:1984
  EN 61000-4-4:1988 or IEC 801-4:1998
  EN 60950:1988+A1, A2, A3

[ii] Low Voltage Directive (Safety) 73/23/EEC as per EN 60950: 1992

Japanese Users:

This is a Class A product based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this equipment is used in a domestic environment, radio disturbance may arise. When such trouble occurs, the user may be required to take corrective action.

この装置は、情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスＡ情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

Australian and New Zealand Users:

This device has been tested and found to comply with the limits for a Class A digital device, pursuant to the Australian/New Zealand standard AS/NZS 3548 set out by the Spectrum Management Agency.

Caution!

Disconnect power cords before servicing.

Computer Virus Notice

What is a virus?

A virus is a program written with malicious intent for the sole purpose of creating havoc in a computer system. It attaches itself to executable files or boot sectors, so it can replicate and spread. Some viruses may only cause your system to beep or display messages or images on the screen. Other viruses are highly destructive and corrupt or erase the contents of your files or disks. To be safe, never assume any virus is harmless.

What types of viruses are known?

Viruses are identified by how they infect computer systems.

- Program Viruses infect executable program files such as.COM, .EXE, .OVL, .DRV, .SYS, and .BIN.
- Boot Viruses attach themselves to a Boot Record, Master Boot, FAT, and Partition Table.
- Multipartite Viruses are both program and boot infectors.

How does a virus spread and contaminate?

There are many ways a virus can spread and infect your system. However, a virus is inactive until the infected program is executed, or a boot record is read. Thereafter, the virus loads itself into system memory and begins to copy and spread itself. Diskettes used in a contaminated system can get infected and in turn, transfer the virus when used in another system. A virus can also spread via programs downloaded from bulletin boards or the internet. Remember that viruses cannot appear all by themselves. They have to be written then spread through direct contact with executable programs or boot sectors.

What can users do to protect their systems?

Awareness is the key. Users need to learn about the existence of viruses, how they perpetuate, and what to do to protect their systems by reducing the likelihood of virus contamination. The following may help:

- Obtain an anti-virus program and make it a habit to scan the system regularly. These programs may be purchased from a local software store or obtained via shareware on the internet or on-line service providers such as CompuServe, Prodigy, AOL, DeltaNet, etc.
- Make backup copies of all files and write-protect the disks.

- Obtain all software from reputable sources and always scan new software for any viruses prior to installing files.

If you suspect your system has been infected, you must find and remove the viruses immediately using an anti-virus program. Next, reboot your system as follows: shut the system down, then power it off for at least fifteen seconds before powering it back on. This is the only way to ensure the virus does not remain in your system RAM.

What do we do to prevent virus contamination?

We stand by the integrity of our products. Our staff takes every precaution to ensure our files are free from viruses. These precautions include:

- Using McAfee VirusScan, a leading anti-virus software that detects and removes over 95% of known viruses and provides comprehensive protection including local and network drives, CD-ROMs, floppies, boot sectors, and partition tables. VirusScan also provides advanced protection against unknown viruses. We continuously update and use the most current version of McAfee VirusScan on all of our products.
- All master diskettes are write-protected and scanned at least twice prior to manufacturing release.
- Sample production diskettes are periodically scanned as an additional quality check.
- All incoming products such as systems to repair, vendor diskettes, hard drives, and trade-show units are scanned for viruses.
- All systems are given a final boot test prior to shipping.

Unfortunately, today's technology makes the creation of newer viruses possible, some of which can elude even the best scanners available. Hence, there is no absolute guarantee of virus immunity on any product. If you believe you have received an infected product from us, please contact Technical Support. Our staff will assist you in correcting the problem immediately.

Preface

Contents

About This Guide xiv
Conventions Used in this Guide..... xv

About This Guide

This guide is designed to be a handy desktop reference for users of all levels. It contains instructions to help the user unpack and set up the computer. Basic information regarding system features as well as procedures on how to connect peripherals are also provided.

Chapter 1: Getting Started explains how to set up the system, from assembling your system and identifying the proper connections to arranging your workspace.

Chapter 2: System Features covers information about the internal and external features as well as the system architecture and supported operating systems.

Chapter 3: InforManager™ LCD discusses the IFM display with details about the various menus and instructions on how to navigate through them.

Chapter 4: Troubleshooting provides reference material on troubleshooting your system.

Chapter5: Maintenance provides information on cleaning and maintaining your system.

Please take the time to read through the manual before using your computer. In the unlikely event you encounter a problem, refer to the handy troubleshooting section located towards the end of this guide.

Conventions Used in this Guide

Throughout this booklet, you will see the following conventions:

DATA EXPANDER USER'S GUIDE CONVENTIONS	
CONVENTION	**DESCRIPTION**
<**Enter**>	A key name corresponds to a key on the keyboard.
<Ctrl> + **<Alt>** + **<Del>**	A plus sign indicates that the keys on either side of it must be pressed simultaneously.
Setup	Commands to be entered as well as messages that appear on your monitor are printed in "ARIAL" font.
System User's Guide	Names of publications and files are italicized.
Sidebars (note example shown on the right)	Sidebars denote critical information such as warnings, information, and important notes.

Note:

This is an example of an important note that may appear in the manual.

Getting Started

Contents

Before You Begin..... 2
Assembling Your System..... 3
Connecting Peripherals 4
Powering Up the System..... 5

Before You Begin

Congratulations on your purchase of this computer. With the arrival of your new system, you are probably eager to assemble and have it operating. This section will help you accomplish the following:

- Assemble the system
- Connect your monitor and keyboard
- Power up the system

Carefully read and follow these instructions to ensure your system operates correctly.

Assembling Your System

1. Prepare a clean, flat, and firm surface for your computer. Allow at least three inches at the rear for cabling and air circulation.

2. Protect your computer from extreme temperature and humidity. Do not expose your computer to direct sunlight, heater ducts, and other heat-generating objects.

3. Keep your system away from equipment that generates magnetic fields. Even a telephone placed too closely to the system may cause interference.

Inspecting the Contents

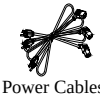
Unpack the product carton and inspect the contents. Standard systems include the following items.


10410 System


- User's Guide
- Technical Reference


Utilities


Mouse


Power Cables


Enhanced Kevboard

Check the packing list to verify that all equipment and associated manuals are included in your shipment. Inspect everything carefully. If you suspect any damage from shipping, contact Technical Support.

When returning equipment to the factory, you must first obtain a Return Material Authorization (RMA) number from Technical Support.

Keep the product carton and foam packing, in case you have to send the system out (i.e. for repair, etc.) If you return your system to the manufacturer in different packaging, your warranty may be voided.

Connecting Peripherals

Refer to the illustrations and procedures below when connecting peripherals to your system.

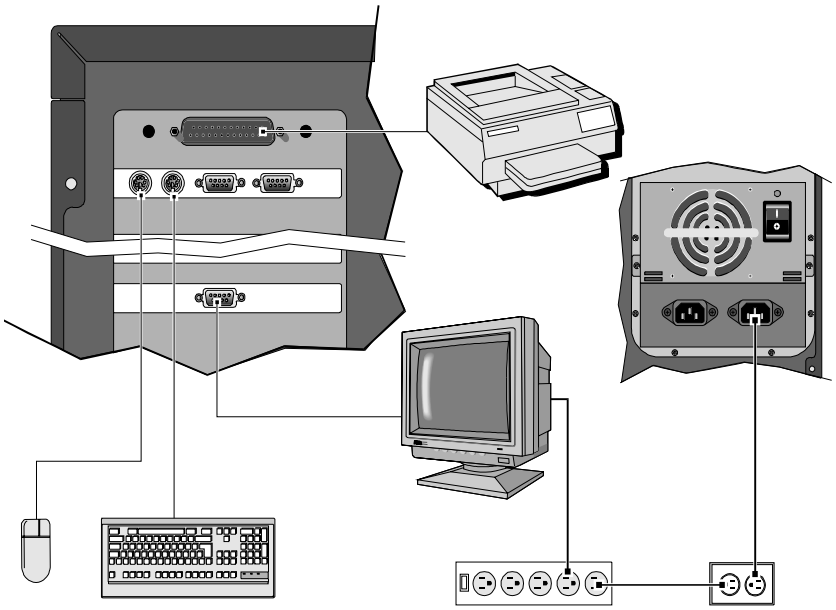


Figure 1: Connecting Peripherals

1. Connect the keyboard to the keyboard port.
2. Connect the monitor video cable to the video port. The location of the port may vary depending on the type of video card installed in your system.
3. Connect the monitor power cable to an AC outlet or preferably, a surge control outlet station.
4. Verify that the Voltage Selection Switch on each power supply is set for the proper voltage in your area (115V or 230V).

Using the power cable(s) supplied with your system, connect the the power supply to an AC outlet. If your system is equipped with more than one power supply, connect each of the power supplies to a separate AC outlet.

Powering Up the System

- Press the ON/OFF switch on the front panel, and the green LED on the front panel will illuminate ON.
- If you turn off your system, wait at least ten seconds before turning the system back on.
- The system self-checks the memory even if a monitor is not connected. If a monitor is connected and powered on, the screen will display the power-up sequence.
- If more than one CPU is installed, the system will display which CPU it is currently testing.
- If any errors are encountered, your system will display them on the monitor.
- If a monitor is not connected or the system is unable to display an error, an error beep code will sound.

If the system encounters an error, it will most likely be a nonfatal one, meaning, the system will function until the error can be corrected (usually through the BIOS Setup). In the rare case of a fatal error, contact your Technical Support field service support.

System Features

Contents

Basic Architecture 8
Front Panel 9
Rear Panel 12
System Board 15

Basic Architecture

The following features are standard equipment for this system:

- Intel Pentium® Pro® processor
- Onboard symmetrical processing supporting up to six Pentium® Pro® processors
- 128-MB Error Checking & Correction (ECC) RAM, expandable to 2-GB on SIMM card and up to 4-GB on optional DIMM card
- 32-bit PCI and EISA bus master; 64-bit data path between processors and memory (256-bit with 4-way memory interleave)
- 2-MB DRAM PCI graphics adapter
- SCSI CD-ROM drive
- 1.44-MB 3.5-inch floppy drive
- Integrated floppy drive controller supporting up to two floppy devices of 1.44-MB and 2.88-MB formats
- Power Supply Subsystem with three redundant/hot-pluggable N+1 power supply modules (two 350-Watt power supplies plus one 350-Watt spare)
- InforManager™ with client software for continuous monitoring and reporting of system devices and environments
- Phoenix upgradable Flash BIOS supporting DMI 2.0

Front Panel

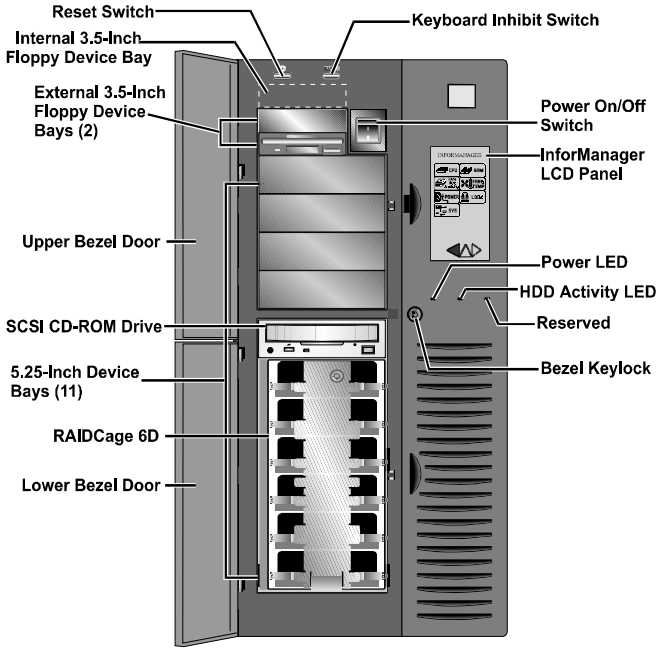


Figure 2: Front Panel

Reset Switch

The system reset switch allows you to reset the system without having to power it off and then on again.

3.5-inch Floppy Disk Drive

The standard system is equipped with one half-height 1.44-MB 3.5-inch floppy disk.

SCSI CD-ROM Drive

The system comes standard with one factory-installed SCSI CD-ROM drive.

Bezel Doors

The top bezel door offers access to the Power, Reset, and Keyboard Inhibit switches, as well as the 3.5-inch and the upper 5.25-inch drives. The lower bezel door offers access to the lower 5.25-inch drives.

Storage Bays

The system is equipped with fourteen storage bays which can support up to 78-GB of fixed media storage.

- three 3.5-inch bays: one with factory-installed 1.44-MB 3.5-inch floppy diskette drive, one external front-accessible bay, and one internal-accessible bay
- five 5.25-inch bays (one with factory-installed SCSI CD-ROM Drive): all front-accessible and can support any 5.25-inch device or 3.5-inch device with a special mounting bracket
- six 3.5-inch Quick Hot Swap bays housed in a RAIDCage (***RAIDCage 6D***) which also supports 1-inch and 1.6-inch devices

Keyboard Inhibit Switch

The keyboard inhibit switch can be locked to prevent unauthorized access to the system. When locked, the keyboard will not function.

Power On/Off Switch

The power switch is a rocker assembly. Rock the switch up (**I**) to power the system ON, rock the switch down (**0**) to power the system OFF.

LED Indicators

The front panel includes three LED indicators that signal a specific message when illuminated:

LED	Meaning (when illuminated)
Power	Power is ON.
Hard Disk Activity	Hard disk is in use.
Reserved	(for future use)

Bezel Keylock

The keylock allows you to lock the bezel doors to prevent access to the front panel.

InforManager™ (IFM) LCD

The system is equipped with a touchscreen LCD control panel that displays the status of the InforManager™ and allows the user access to all of its functions:

- System Monitor
- Fan Monitors
- Temperature Monitors
- Power Supply Monitors
- Activity Monitors (CPU and disk drives)
- Rear and Front Panel Monitors
- System Information

For detailed information regarding the functions and usage of the InforManager™ LCD panel, refer to Chapter 3.

Rear Panel

The rear panel of the system is equipped with I/O Ports, connectors, and switches as illustrated and explained below.

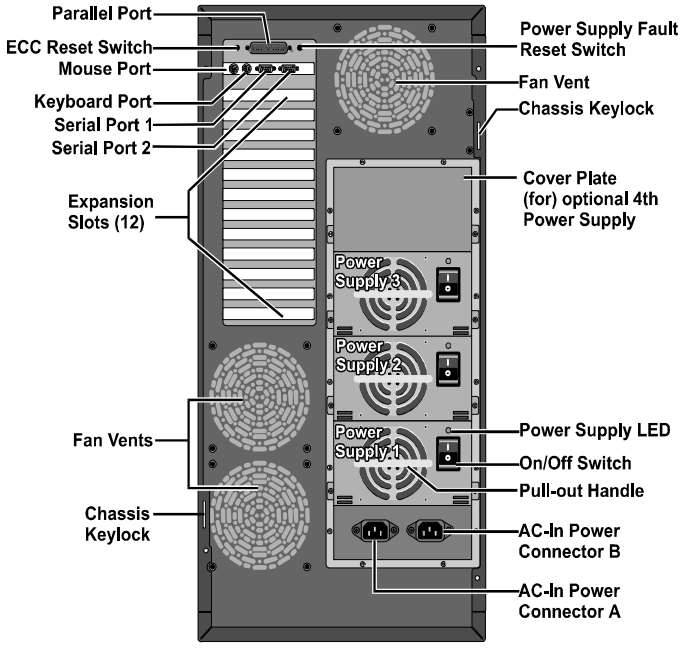


Figure 3: Rear Panel

ECC Reset Switch

This switch allows you to reset the system when a memory fault occurs.

Parallel Port

Connect parallel devices such as parallel printers and scanners to this port.

Mouse Port

This port supports any mouse with a miniature circular DIN (mini-DIN) connector.

Keyboard Port

This port supports any keyboard with a miniature circular DIN (mini-DIN) connector.

Serial Port 1

This is a high-speed serial port which uses the First-In-First-Out (FIFO) protocol. If you have a serial mouse, connect it to this port. Other serial devices such as serial printers or modems can also be connected this port.

Note:

If your mouse has a mini-DIN connector, you must connect it to the Mouse Port.

Serial Port 2

This is a high-speed serial port which uses the First-In-First-Out (FIFO) protocol. Serial devices such as serial printers or modems can also be connected this port.

Power Supply Fault Reset Switch

In the event of a power supply failure, pressing this switch turns off the alarm signal and resets the power supply.

Chassis Keylocks (2)

The rear panel is designed with two loop keylocks in which you can install a padlock each to secure the right and left panels.

Redundant Power Supply Subsystem

Standard equipment includes three hot-pluggable, redundant power supplies (two 350-Watt N+1 modules and one spare). The system can support up to four identical power supply modules which yield a redundant power of 700-Watts.

- **Power Supply LED**, when lit, indicates that the power supply is active.
- **On/Off Switch** turns the power supply on or off.
- **Pull-Out Handle** allows ease of installation or replacement of the power supply.

AC-In Power Connector A

This socket conveys power to power supplies 1 and 2. Connect the system power cable to this socket and to an AC outlet.

AC-In Power Connector B

This socket conveys power to power supplies 3 and 4. Connect the system power cable to this socket and an AC outlet.

System Board

The system board functions as the main interface between the processor, memory, and peripherals. Below is an illustration of the system board.

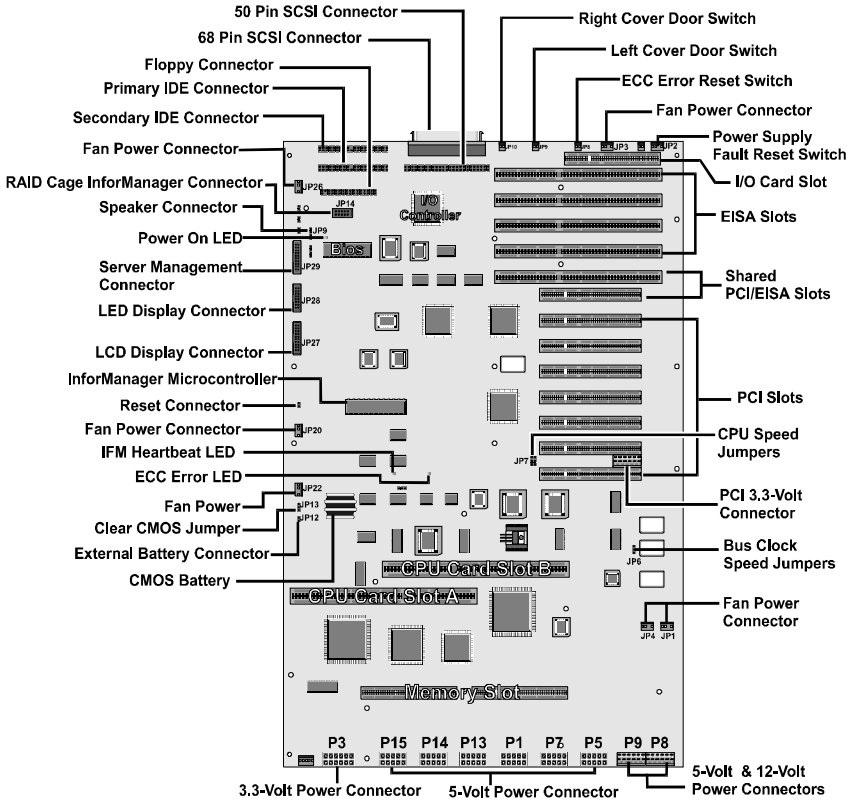


Figure 4: System Board

CPUs and CPU Slots

The standard system is equipped with one Pentium Pro chip installed on CPU card **A** which is installed in CPU card slot **A**. In CPU card slot **B,** a terminator card is installed in place of an optional second CPU card **B**.

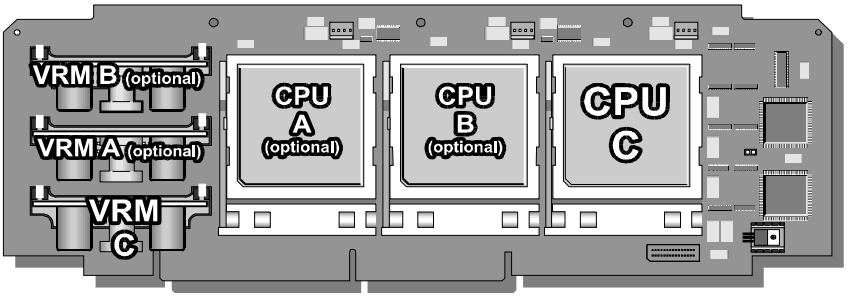


Figure 5: CPU Card

Symmetrical Multi-Processing

Symmetrical Multi-Processing SMP enables all CPUs in the system simultaneously to service interrupts, access system memory, and perform I/O operations. If your operating system does not support SMP, the system adjusts the processing mode to Asymmetrical, meaning only the first CPU accepts I/O interrupts, while the successive CPUs accept only interprocessor interrupts.

Voltage Regulator Module

Each CPU must have a dedicated voltage regulator module (VRM) which adjusts the voltage supplied to the CPU.

Floppy Drive Controller

The floppy drive controller can support up to two devices of 1.44-MB or 2.88-MB format.

Hard Drive Controller

The hard drive controller is an integrated dual-channel PCI/IDE interface is capable of controlling up to four IDE devices and supporting PIO Modes 0-4.

Adaptec® AIC™-7880 SCSI Controller

This is a high-performance, PnP compliant, single-chip PCI local bus-to-UltraSCSI master host adapter. Its pin compatibility provides a direct upgrade path for higher I/O bandwidth requirements with data rates of 20-MB/sec in the 8-bit mode and 40-MB/sec in the 16-bit mode.

Additional features:

- Full 32-bit PCI bus master implementation maximizing data transfer on PCI local bus at 133-MB/sec data bursts
- BIOS Developer's Kit (BDK) allowing easy customization of system BIOS code for various features
- SCAM (SCSI Configured Automatically) Level 1 for Windows 95® enabling automatic configuration of new devices without having to reboot the system.
- Wide SCSI configuration supporting up to 15 connected SCSI peripherals
- Multithreading support for up to 255 simultaneous I/O tasks
- Advanced SCSI I/O cell ensuring data integrity by automatically and continuously adjusting slew rate to compensate for SCSI bus loading
- Driver support for all major operating systems

I/O Card Slot

The I/O ports are housed on an I/O card which is factory installed in this slot.

Expansion Slots

There are a total of twelve expansion slots on the system board:

- seven 32-bit PCI slots
- four 32-bit EISA slots
- one shared PCI/EISA slot

Memory

The system comes standard with 128-MB Error and Correction (ECC) RAM installed on the SIMM card. The sixteen SIMM sockets (8 rows/ banks) can support up to 2-GB of ECC memory. The optional 2 card supports up to 4-GB of ECC memory.

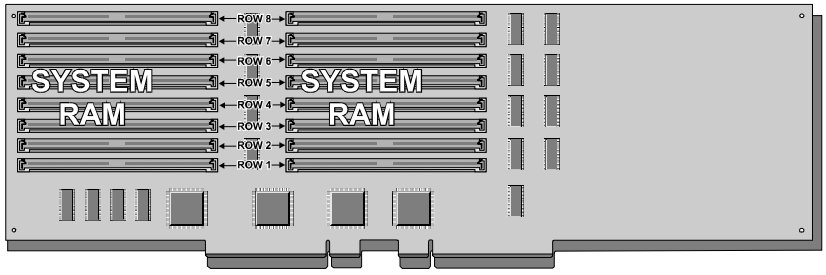


Figure 6: Memory Card

InforManager™

The system is equipped with InforManager (IFM), a special feature consisting of both hardware and software designed to monitor and report the operation status of the system and its devices: CPUs, power supplies, RAM, ambient temperatures, voltages, and fan operation. One way to monitor these devices is using the InforManager LCD panel (see Chapter 3).

Also supplied with this system are client-server monitoring utilities with two special features (currently available in the Windows NT™ utilities only):

- ***ActiveCPR*** (Central Processor Recovery) designed to preserve the processors from damage from extreme temperatures and voltages
- ***Server Watchdog™*** monitors the system for "hangups" and reboots after a designated period of time.

For detailed information about the InforManager utilities, refer to the ***InforManager™ User's Guide***.

InforManager™ LCD

Contents

About InforManager™ 22
CPU Menu 24
RAM Menu 25
Disk Activity Menu 26
Fan and Temperature Menu 27
Power Menu 28
Lock Menu 29
System Menu 30
Alarm/ID/Speaker Menu 33
System Tolerances 34

About InforManager™

The system is equipped with InforManager™ (IFM), a special feature consisting of both hardware and software designed to monitor and report the operation status of the system and its devices: CPUs, power supplies, RAM, ambient temperatures, voltages, and fan operation.

A microcontroller chip embedded on the system board checks the performance of various devices installed in the computer as well as their temperature and voltage levels.

The touchscreen LCD on the front panel is programmed with fully functioning menu screens, allowing access to all system functions.

- System Monitor
- Fan Monitors
- Temperature Monitors
- System Power and Power Supply Monitors
- Activity Monitors (CPU and disk drives)
- Side Panel Monitors
- System Information

To access any menu screen, gently touch the icon of the device you wish to see. The LCD will then display the status or a sub-menu of the device. You can also scroll through the menu screens by touching the highlighted arrows at the bottom of the LCD.

As an energy-saving feature, the LCD screen automatically goes “blank” (sleep mode) after five minutes of inactivity. A touch anywhere on the screen will bring the display back on.

Important!

To ensure data integrity and optimum performance of the IFM, access and operation of the LCD should be restricted to qualified personnel.

Note:

The LCD energy-saving feature is preset and cannot be changed or disabled.

The diagram below illustrates the different menu and sub-menu screens programmed on the LCD panel. Refer to the following sections for more specific information about each menu screen.

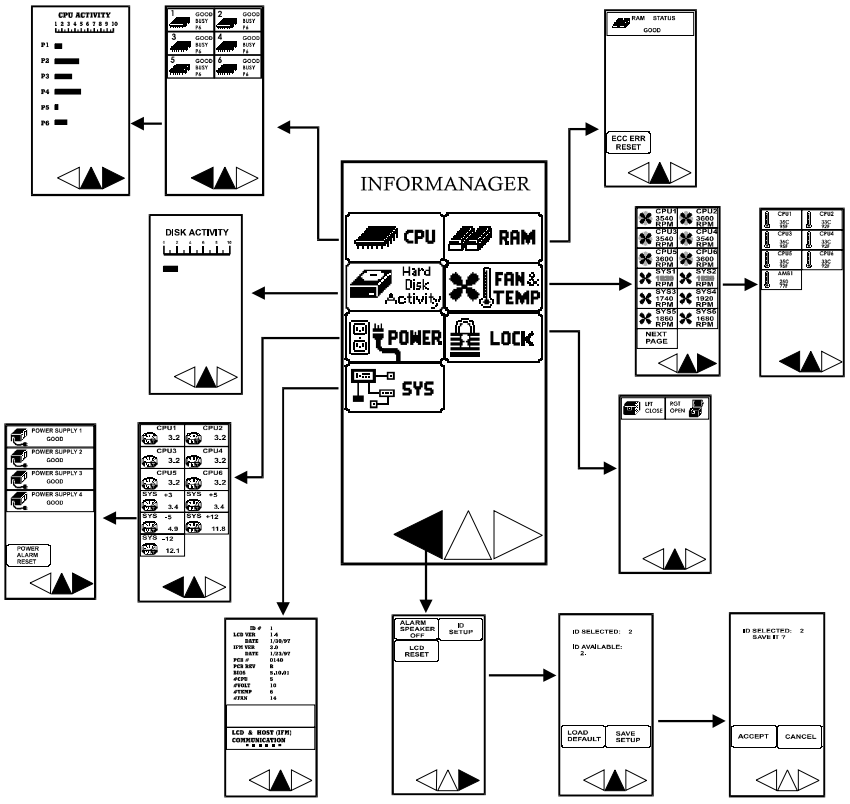


Figure 7: Diagram of LCD Menus

★ *Important!*

A flashing button on the Main menu screen indicates an error condition.

CPU Menu

The CPU menu displays the status (Good or Fail) and current activity (Idle or Busy) of each CPU.

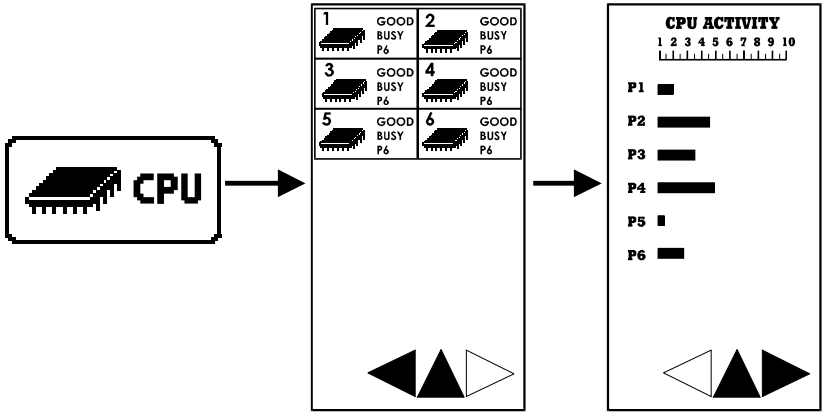


Figure 8: CPU Menu

RAM Menu

The RAM menu displays the current amount of RAM and its status (Good or Fail). The ECC Error Reset button is also accessible through this menu.

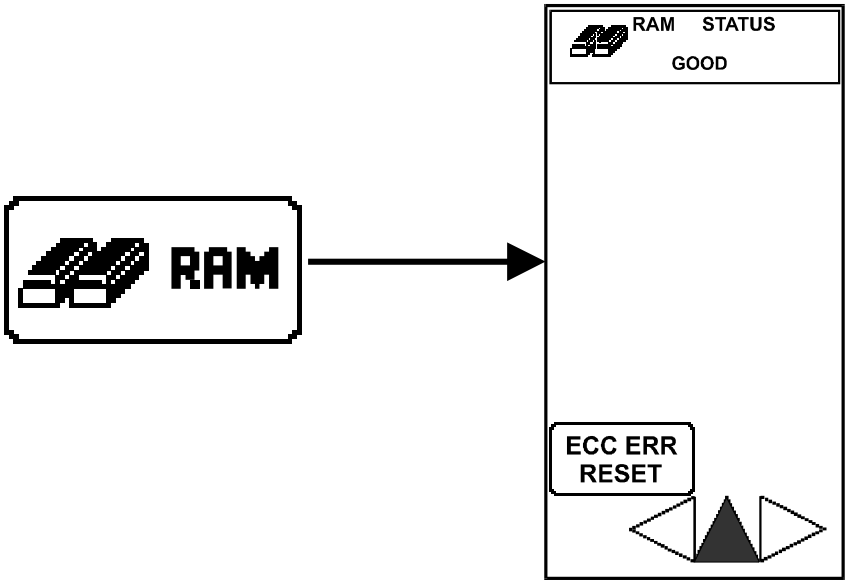


Figure 9: RAM Menu

Disk Activity Menu

The Disk Activity menu displays the drives currently installed and their activity which is indicated by a double dash underneath BUSY or IDLE.

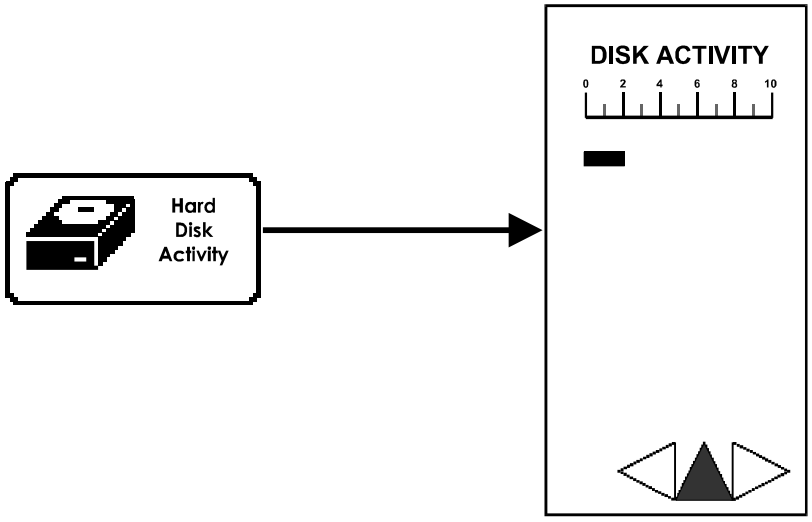


Figure 10: Disk Activity Menu

Fan and Temperature Menu

The activity and speed (RPM) of both CPU fansinks and chassis fans are displayed on these menus.

Normal fan operation is indicated by a “rotating” fan icon. If a fan encounters a problem, its corresponding fan icon and RPM on the LCD readout will begin to flash instead.

A submenu displays the temperature of each CPU as well as the internal and external ambient temperatures. Normal temperature is indicated by the continuous rising and falling motion of the “mercury” inside the thermometer icon. When the temperature falls out of range, motion in the thermometer icon will stop, and the temperature readout will begin to flash instead.

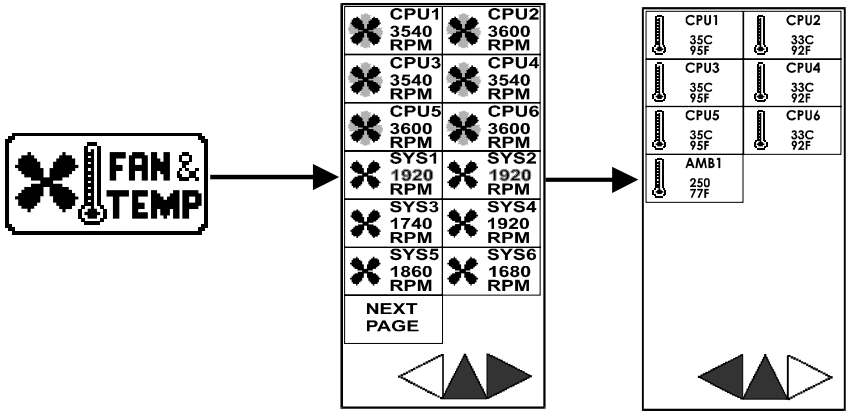


Figure 11: Fan and Temperature Menu

Power Menu

The Power menu screen displays the voltages associated with the system including the voltage applied to each CPU, voltages supplied to the system board, and the voltages supplied to the peripherals.

When a voltage is within normal range, the pointer in the voltage meter icon moves laterally back and forth. If an out-of-range voltage occurs, the pointer will stop completely and the voltage readout will start flashing instead.

A submenu displays the status (GOOD or FAIL) of the power supplies.

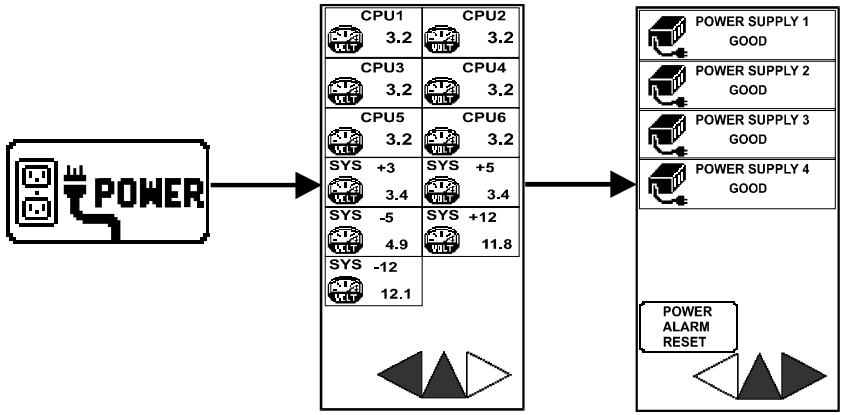


Figure 12: Power Menu

Lock Menu

The Lock menu displays the status (OPEN/CLOSE) of the side panels. A flashing icon indicates that the corresponding panel is open. When a panel is closed, the icon remains static.

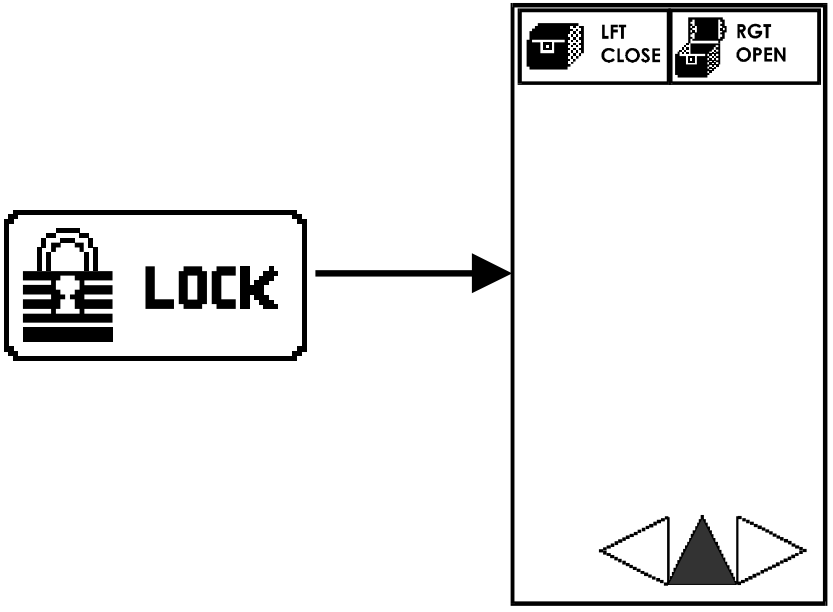


Figure 13: Lock Menu

System Menu

All currently installed firmware, i.e., system BIOS, IFM BIOS, and LCD BIOS, as well as the quantities of hardware devices installed are displayed on this menu.

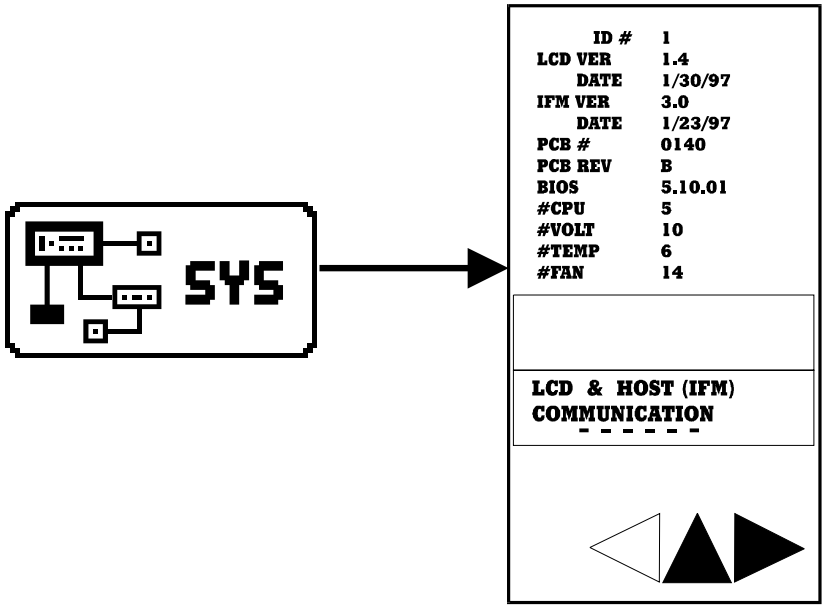


Figure 14: System Menu

Communication between the LCD and IFM is designated by the continuously increasing and decreasing number of dashes underneath the ***LCD & HOST IFM Communication*** line.

Non-communication is indicated by a notation “NONE” in the place of dashes as well as a beeping alert.

LCD Reset

In the event of non-communication between the LCD and host IFM, perform the steps below:

1. Reset the LCD panel by pressing the ***LCD Reset*** button which is accessible through the ***Main*** screen submenu as shown below.

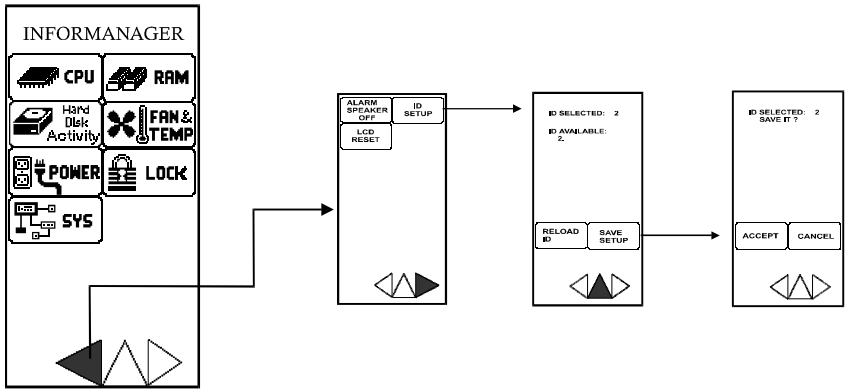


Figure 15: LCD Reset Menu

2. If there is still no communication between the LCD and host IFM, then reboot the system.

3. If there is still no communication after steps 1 and 2 have been performed, then contact Technical Support.

ID Setup

To establish communication between the LCD and host IFM, the LCD must maintain an ID number that matches the ID number on the system board. The ID numbers are displayed in the ***ID SETUP*** submenu (see) as follows:

- ***ID Selected*** displays the LCD ID number.
- ***ID Available*** displays the ID number on the system board.

In the event these ID numbers do not match, communication will cease. You must restore communication by performing the following:

1. Press the ***Reload ID*** button to automatically reload an LCD ID number that matches the current ID number on the system board.
2. Press the ***Save Setup*** button which will display a submenu. Then, press the ***Accept*** button to confirm the change you just made.

If you need to change the ID number on the system board, you must do so through the ***BIOS Setup Program***.

Alarm/ID/Speaker Menu

The Alarm Menu allows you to turn the speaker OFF or ON. The default is ON. You can also access ***ID Setup*** and ***LCD Reset*** from this menu.

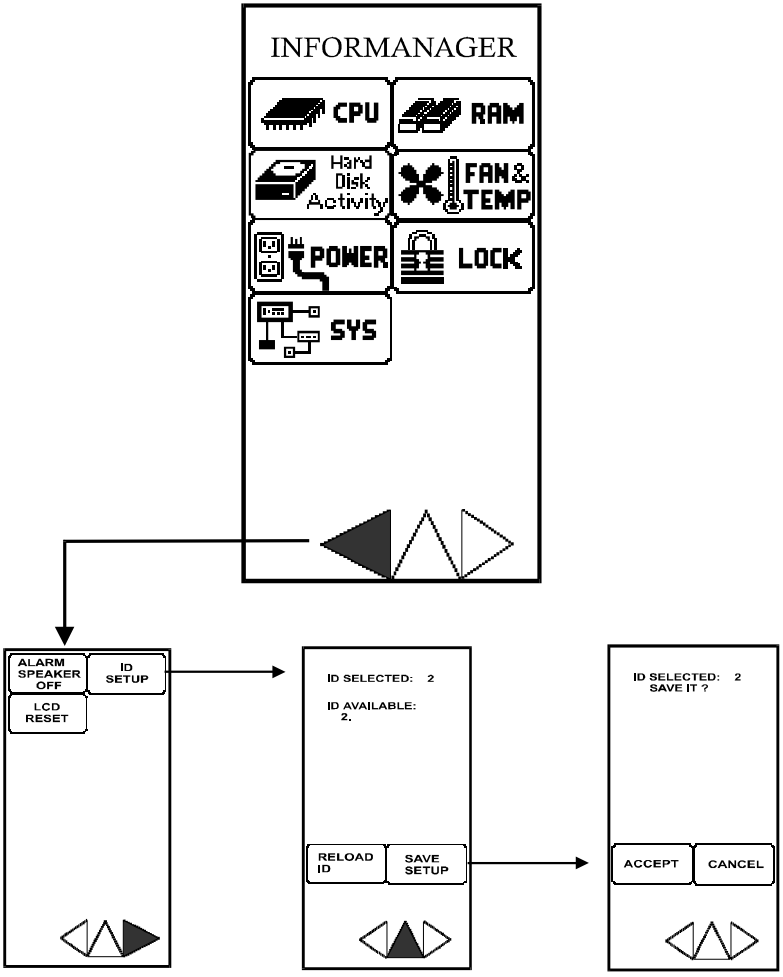


Figure 16: Alarm/ID/Speaker Menu

Important!

This data file is used by the system to determine the system tolerances. The wording and format are essential and should NEVER be changed.

Note:

"-98" is a key number used to indicate that there is no tolerance value for this item.

System Tolerances

The following table contains the tolerance values that have been set for this system.

Table 1:

Field	Low	Typical	High	Definition
fan	1200	3000	-98	system fan speed
processorfan	0	3600	-98	processor fan speed
processortempera-ture	-98	100	176	processor temperature
processorvoltage	2.1	3.3	3.7	processor core voltage
internalambient	-98	95	113	internal ambient temperature
externalambient	-98	78	95	external ambient tempera-ture
drivecage	-98	95	122	drive cage temperature
systemboard3VP	3.0	3.3	3.6	system board voltage 3.3V
systemboard5VP	4.5	5.0	5.5	system board voltage 5.0V
systemboard5VN	-5.5	-5.0	-4.5	system board voltage -5.0V
systemboard12VP	10.8	12.0	13.2	system board voltage 12V
systemboard12VN	-13.2	-12.0	-10.8	system board voltage -12V
peripheral5VP	4.5	5.0	5.5	peripheral board voltage 5V
peripheral12VP	10.8	12.0	13.2	peripheral board voltage 12V

Fans speeds are measured in revolutions per minute (RPM), temperatures in degrees Fahrenheit (°F), and voltages in Volts (V).

Troubleshooting

Contents

Handy Checklists 36
Looking Things Over 36
Verifying Your Configuration 36
Common Problems 37
Drive Problems 38
Monitor Problems 39
Printer Problems 40
Installation Problems 41

Important!

DO NOT, under any circumstances, return any equipment without first obtaining a Return Material Authorization (RMA) number from Technical Support.

Handy Checklists

If your system does not operate correctly, re-read the instructions for the procedure(s) you have performed. If an error occurs within an application, consult the documentation supplied with the software.

If the suggestions in this section are not helpful, try the Technical Support department.

The following checks should be performed in the event of a problem. If these checks do not help solve the problem, consult Technical Support.

Looking Things Over

Sometimes, the simplest things can cause trouble. Before powering up the system, perform the following checks:

1. Is the power cord connected to the PC and an AC outlet?
2. Is the AC outlet supplying power?
3. If a power strip is used, is it switched on?
4. Are the voltage selection switches on the power supply set for the proper voltage (115V or 230V)?

Verifying Your Configuration

If your system is not operating correctly, the BIOS may contain an invalid configuration parameter. Enter the BIOS program and check your configuration settings. For detailed information regarding the BIOS program, refer to ***BIOS Setup*** section in your ***Technical Reference*** manual.

Common Problems

Table 2:

Problem	Probable Cause	Solution(s)
The system will not power ON.	The system is not connected to an AC outlet. The voltage-selection switch is not set correctly.	Check the power cable and make certain it is connected to an AC power source. Make certain the voltage-selection switch reflects the correct power source.
The system does not display the date and time correctly or at all.	The date and time parameters in BIOS Setup may be set incorrectly. The backup battery may need to be replaced.	Enter the BIOS Setup program and correct the date and time settings. Contact Technical Support for assistance.
The Power LED is flashing.	ECC memory failure has occurred.	Press the Keyboard Inhibit Switch IN and then OUT. NOTE: If the Keyboard Inhibit Switch is already in locked position (IN), you must first unlock it (OUT) and then lock it back (IN) to reset the ECC memory status and the Power LED.
The Power LED continues to flash after ECC reset.	A DIMM was incorrectly installed. A DIMM is not functioning properly.	Check the DIMM for proper installation Replace the faulty DIMM.

Drive Problems

Table 3:

Problem	Probable Cause	Solution(s)
The system will not boot.	The hard disk is not formatted.	Boot from a floppy diskette, then format the hard drive.
	The disk is too slow to be recognized by the system in time.	Follow the instructions on the screen to try the boot again.
	A boot file was not found.	Try booting from a bootable floppy diskette.
	The disk parameters in BIOS Setup are incorrect.	Enter BIOS Setup and check the disk parameters.
The diskette LED illuminates but files cannot be accessed.	The diskette was loaded incorrectly.	Remove the diskette, and load it properly into the drive.
	The diskette is damaged.	Run CHKDSK (DOS) or another disk-verification utility to check the disk's integrity.
	The file is corrupted (bad).	Try the diskette on another computer. Re-copy the file if necessary.
Files cannot be written to the disk or diskette.	The disk is write protected.	Remove the write protect tab or switch from the disk.
	The wrong drive letter was specified.	Check to ensure the drive LED illuminates when you issue the write command. If it doesn't, try another drive letter.
	The disk is not formatted.	Format the disk.
Insufficient space on the drive.	The drive you are trying to write to is full.	Remove files from the disk or write to another device.
	The file you wish to copy is too large to fit on the specified disk or diskette.	Compress the file and try again, or write to another disk.
A file cannot be read from the disk or diskette.	The wrong drive letter was specified.	Check to ensure the drive LED illuminates when you issue the read command. If it doesn't, try another drive letter.
	The disk is not formatted.	Format the disk.

Monitor Problems

Table 4:

Problem	Probable Cause	Solution(s)
The monitor will not power-up.	The power cord is not connected to an AC outlet.	Check the power cord and make certain it is connected to a working AC outlet.
	The monitor's power switch is not in the ON position.	Make certain the switch is in the ON position.
The monitor's power light is on but nothing displays on the screen.	The monitor's contrast and brightness knobs are set too low.	Adjust the brightness and contrast knobs until you can see the display.
	The computer system is not powered-up.	Power-up the system.
	The monitor's video cable is not connected to the system's video port.	Check the video cable and ensure it is connected to the proper port.
	The video cable's connector has a bent pin.	Check the cable's connector and repair if necessary.
The characters on the screen are dim.	The monitor's contrast and brightness knobs are set too low.	Adjust the brightness and contrast knobs until you can see the display clearly.
The color monitor displays the Microsoft Windows application in black and white.	The system was powered-up before the monitor.	Exit from the WindowsMicrosoft Windows program <Alt> + <F4>, then reset the system.
Characters on the screen are garbage.	The video cable is damaged.	Check the video cable for bent pins or broken wires.
	The video card is faulty.	Call Technical Support.

Printer Problems

Table 5:

Problem	Probable Cause	Solution(s)
The printer will not power-up.	The power cord is not connected to a working AC outlet.	Check the power cord and AC outlet.
	The printer's power switch is not in the ON position.	Check the switch.
The printer will not print.	The printer is off-line.	Press the printer's On-Line switch and make certain the On-Line LED illuminates.
	The printer's data cable is not connected properly.	Check the cable and make certain it is connected to the correct port.
	The printer's data cable is damaged.	Check the cable for bent pins or broken wires.
	The port is bad.	Call Technical Support.
The printer prints garbage.	The printer's data cable is not connected properly or is damaged.	Check the cable and make certain it is connected properly and not damaged.
	The wrong data cable is being used.	Make certain you are using the proper data cable.
(Serial printers) The printer will not print.	The baud rate for the serial port does not match that of the printer.	Enter BIOS Setup and check the ports parameters. They should reflect the printer's settings.

Installation Problems

Table 6:

Problem	Probable Cause	Solution(s)
A drive is not recognized by the system.	The BIOS Setup program reflects the wrong parameters.	Enter the BIOS Setup program and enter the appropriate parameters for the device.
	The device is not formatted.	Format the drive.
	The device controller is not configured properly.	Check jumpers and cable connections.
Memory errors were detected during the power-up sequence.	Memory was added or removed and the new configuration was not saved in BIOS Setup.	Enter BIOS Setup and save the new memory configuration.
	A memory DIMM was installed incorrectly.	Check the DIMMs for proper installation.
	A memory DIMM is not functioning properly.	Replace the faulty DIMM.
An adapter card is not recognized by the system.	The interrupt and/or I/O address is set incorrectly.	Check the address configuration of the adapter card and ensure it does not conflict with another card in the system.
The Power LED is flashing.	ECC memory failure has occurred.	Press the Keyboard Inhibit Switch IN and then OUT. NOTE: If the Keyboard Inhibit Switch is already in locked position (IN), you must first unlock it (OUT) and then lock it back (IN) to reset the ECC memory status and the Power LED.
The Power LED continues to flash after ECC reset.	A DIMM was incorrectly installed.	Check the DIMM for proper installation
	A DIMM is not functioning properly.	Replace the faulty DIMM.

Maintenance

Contents

Cleaning the Mouse 44
Cleaning the Keyboard 45
Cleaning the Monitor Screen 45

Cleaning the Mouse

If the mouse pointer on the screen moves erratically when you move the mouse, dirt is probably on the rollers inside the mouse. In this case, clean your mouse as follows.

Recommended Tools

- cleaning cloth
- adhesive tape
- cotton swab
- isopropyl alcohol
- cross-tip screwdriver

1. Shut down the system.
2. Remove the bottom cover of the mouse. Depending on the model, you may need to first remove the screws that secure the cover. Set aside screws.
3. Remove the ball out of the ball socket.
4. Use adhesive tape to pick up any dust or lint on the surface of the mouse ball.
5. With a cleaning cloth, wipe away dirt or lint inside the mouse-ball socket. Moisten the cloth with isopropyl alcohol is necessary.
6. If foreign matter is trapped inside the socket or on the rollers, use a cotton swab dipped in isopropyl alcohol to loosen it.
7. Allow surfaces to dry completely after cleaning.
8. Return the mouse ball to the socket and replace the cover.
9. If applicable, secure the cover with the screws removed previously.

Cleaning the Keyboard

Occasionally, you should clean the keyboard to free it of dust and lint particles that may be trapped under the keys. The easiest way to do this it to blow trapped dirt from the keys using an aerosol keyboard cleaner which is usually supplied with a straw-like extension for hard-to-reach places.

If you spill liquid on the keyboard, follow the steps below.

1. Shut down the computer and disconnect the keyboard.
2. Turn the keyboard upside down for the liquid to drain out. Allow the keyboard to dry overnight before trying to use it again.
3. After verifying that the system is off, reconnect the keyboard to the computer.

If the keyboard fails to work after draining, contact Technical Support.

Cleaning the Monitor Screen

Use a soft cloth and window cleaner to clean the monitor screen. Squirt a little cleaner on the cloth and wipe the screen with the cloth.

Caution!

NEVER spray directly on the monitor screen.

Index

A
About This Guide xiv
adapter card 41
alarm 13, 33

B
baud rate 40
bezel doors 10, 11
BIOS 36, 37, 40, 41
BIOS Setup 5, 32
bus master 8

C
CD-RO 10
CD-ROM 9
Conventions Used in this Guide xv
CPU 5, 16, 22, 24, 27, 28
CPU card 16

D
DIMM 8, 37, 41
DMI 8
DRAM 8

E
ECC 8, 25, 37, 41
EISA 8
error 5, 8
  ECC 8
  fatal error 5

F
fan 27
fansink 27
firmware 30
Flash BIOS 8
floppy disk 9
floppy drive 8, 10, 16
format 41
front panel 9, 11, 22

G
graphics adapter 8

H
host IFM 31
humidity 3

I
I/O Ports 12
  keyboard port 4
  printer port 40
  video port 4
I/O ports
  keyboard 13
  mouse 13
  parallel 12
  serial 13
ID 32
IDE 17
InforManager 8, 11
  client software 8

K
keyboard 2, 4, 45
keylock 11, 13

L
LCD 11
  diagram 23
  sleep mode 22
LCD ID number 32
LED 5, 10, 37, 40

M
memory 41
memory fault 12
microcontroller 22
mini-DIN 13
monitor 2, 5, 45
mouse 44

N
N+1 8

P
PCI 8
Pentium 8
peripherals 4
PIO Mode 17
power connectors 14
power supply 4, 8, 13, 14, 28, 36
printer 40
problems 37
  common problems 37
  installation problems 41
  printer problems 40

R
RAIDCage 10
RAM 8, 22, 25
rear panel 13
redundant power 13
reset switch 9
Return Material Authorization (RMA) 3, 36

S
SCSI 8, 9, 10
serial port 13
Serial printers 40
SIMM 8
SMP 16
speaker 33
storage bays 10
  quick hot swap 10
switch
  ECC reset 12
  keyboard inhibit 10
  power 10
  power supply fault reset switch 13
  reset 10
system board 32

T
temperature 3, 22, 27
terminator card 16
touchscreen 22

V
video cable 39
video card 39
voltage 28
voltage regulator module (VRM) 16
voltage selection switch 4, 36